

Notes on some Buprestidae of Northern California (Col.).

By W. J. CHAMBERLIN, Forest Entomologist, Oregon State College, Corvallis, Oregon.

This paper is the result of observations and collections made during two summers spent in northern California. The summer of 1915 was spent at Weed, a small lumbering town in Siskiyou County, at the base of Mt. Shasta. The general elevation surrounding Weed is 4500 feet. The summer of 1916 was spent in Siskiyou, Del Norte, Humboldt and Mendocino Counties of California.

Regarding the species taken at Weed it might be well to mention that there are from 50 to 60 cars of logs brought in daily from the Trinity Mountains, some thirty miles distant. It is probable that the majority of the forest insects are brought in with this timber, though undoubtedly some are attracted from the surrounding territory by the odor of fresh pine.

Buprestids were by far the most numerous beetles occurring in the vicinity of Weed and over 450 specimens were taken at odd times during a six weeks' stay.

1. *Chalcophora angulicollis* Lec.

Twenty-six specimens of this species were taken at Weed in 1915. The majority were captured resting in the bright sunshine, on buildings, telephone poles, on the wooden sidewalks and a few were taken while in flight. No less than ten specimens were taken on piled lumber. They attract attention by the rasping sound made in flight and are easily captured in the hand. They seem to be attracted by moving objects and will often alight on horses, moving wagons, or on man.

This species is common all over the northern half of the State, breeding in yellow pine, Douglas fir, white and grand fir.

2. *Dicerca prolongata* Lec.

This species has been taken by Dr. Van Dyke on *Populus trichocarpa* in Trinity County, California, and on *Populus tremuloides* at Lake Tahoe. It breeds in *P. trichocarpa* and doubtless in *P. tremuloides* also.

3. *Dicerca sexulis* Cr.

This is one of the handsomest species of the genus and is found throughout the northern part of the State. I have taken it from Douglas fir, which seems to be its principal host plant; also from yellow pine. Dr. Van Dyke has taken it from knobcone pine at McCloud, in June, 1914. I have taken specimens emerging from Douglas fir on April 4, at an elevation of 3500 feet in the Santiam National Forest of Oregon.

4. *Dicerca tenebrosa* Kirby.

Of this species Dr. Van Dyke writes as follows:

Have found the western phase of this species about Fallen Leaf Lake, Lake Tahoe, in July, 1915, on dead lodge pole pine, in which it no doubt breeds. It probably extends south through the Cascade-Sierra range in the lodge pole pine belt.

I have never encountered this species in California, but in the Blue Mountains of eastern Oregon it is the most common member of the genus and breeds in both *Pinus ponderosa* and *P. contorta*. Near Klamath Falls, Oregon, it was taken from *Abies concolor*.

5. *Dicerca hornii* Cr.

This species breeds in *Alnus* and *Ceanothus* in most counties of northern California. It is quite common locally at certain periods.

6. *Dicerca pecterosa* Lec.

This rare species was taken by Dr. Van Dyke at Lake Tahoe in July, 1915. In Oregon it breeds in peach, and I have taken it on the lodge pole pine in Grant County, Oregon.

7. *Trachykele opulenta* Fall.

I quote from Dr. Van Dyke on the two species of this genus:

A number of brilliantly green specimens of *Trachykele* were beaten from the alpine juniper on the ridge above Lake Tahoe, during July, 1915, by Ralph Hopping, E. P. Van Duzee and myself. Many borings in dead juniper limbs were also observed which were no doubt due to this species. This species, I have generally been considering as Fall's *opulenta*, though it may be true *blondeli* Mars. about which there has been so much uncertainty. It is quite similar to other specimens which I have from Seattle, Washington, where it no doubt lives on *Thuja plicata*, from Shasta County, California, in the territory of Sargent cypress in Marin County. In the southern Sierras, this species is also

found but another green one is also found there. This last is probably the true *opulenta* Fall.

The author has taken one specimen from the sapwood of *Lebocedras decurrens*.

8. **Trachykele nebulosa** Fall.

"One specimen taken at Carrville, Trinity County, California, in July, 1913. Others were taken about Lake Tahoe from *Abies concolor* by Hopping, Van Duzee and myself. It breeds in *Abies concolor* and *A. magnifica* as specimens have been taken emerging." Both species of this genus undoubtedly occur in favorable localities throughout the northern part of the State. They have been taken at Corvallis, Oregon, and also in Western Washington.

9. **Poecilonata cyanipes** var. **ferrea** Mels.

This species is found throughout the northern part of the State and probably breeds in all the poplars and willows. I have dug adults from *P. tremuloides* and *P. trichocarpa* in Humboldt County.

10. **Buprestis gibbsii** Lec.

Not common; found occasionally on oak and poplar in which they probably breed. One specimen taken at Garberville, Humboldt County, California, August, 1916. Found in Sonoma County, by Rivers; at Nevada City and Lake Ellann, Tuolumne County, by Van Dyke. May breed in *Quercus*.

11. **Buprestis connexa** Horn.

This rare and beautiful species is never found in numbers in any locality. Three specimens were captured. The first specimen was taken July 18 from the sapwood of yellow pine (*P. ponderosa*), fully mature and would doubtless have emerged in a few days. The gallery traversed the cambium for some distance, winding around in a very irregular pattern, then entered the sapwood to a depth of two inches. The pupal cell was just within the sapwood. The second specimen was taken on the 28th of July, resting on the foliage of yellow pine with numbers of *B. rusticorum*. The last specimen was found embedded in pitch on the end of a yellow pine log.

12. *Buprestis laeiventris* Lec.

This was the most numerous species encountered. Out of 116 specimens taken only 8 were taken on the freshly cut logs. They seem to have a preference for old dry logs and poles without bark. Many were taken on railroad ties and in the dust along the road. This is the only species I have ever encountered which deposits its eggs in or on logs where there is no bark. I observed one individual deposit eggs in the weather checks in the end of an old dry log. How the young larvae were to enter a seasoned pine log and live is a mystery. On another occasion a female deposited her eggs in a small check on the side of a pine log. The place selected was destitute of bark, though less than six inches away the bark was still on the log.

The specimens taken show a great variety of patterns on the elytra, varying from a few faint spots of yellow on the black background to great splotches, which cover over one-half the surface. The basic color varies from a shiny black to an iridescent green. The length ranges from 15 mm. to 23.5 mm.

13. *Buprestis rusticorum* Kirby.

This species was found rather abundantly in certain situations. Out of 79 specimens collected, 63 were taken feeding on the needles of *Pinus ponderosa*. Many were observed copulating during August and were easily captured by holding a cyanide bottle or other receptacle under them and jarring the limb or twig. When thus disturbed they fold their appendages and drop to the ground. It is not easy to detect them here as they immediately crawl into the grass, under twigs, rocks, or into any convenient hiding place. Another favorite resting place is the sawdust fills. Many were observed crawling around through the coarse sawdust and debris. Breeds in yellow pine and Douglas fir, and occurs in all the northern counties.

14. *Buprestis langii* Mann.

This is undoubtedly the female of *Buprestis fasciata*. A single specimen was taken in flight, July 7, 1915. Dr. Van

Dyke has authentic records of this species being dug from its pupal cells in Douglas fir. It is very probable that it also breeds in yellow pine. They are often seen on the bright green leaves of the poplars and willows, seeking these resting places because of the protection they afford.

15. *Buprestis lauta* Lec. (*B. arulenta* Linn.)

Probably one of the most common species from Canada to Southern California. This species breeds in Douglas fir, yellow, lodge pole, sugar and Monterey pine, and western red cedar. The last named host is an Oregon record, the author having dug an adult male from a fallen *Thuja plicata* log on the Coast Mountains in April, 1914.

16. *Buprestis confluens* Say.

This is ordinarily a Great Basin species, but Dr. Van Dyke states that it has been taken in the vicinity of Lake Tahoe, California, on one or two occasions. Breeds in poplar.

17. *Buprestis adjecta*.

One taken on an electric light pole July 20, 1915, at Weed. Occurs from Washington to Tulare County, California. Probably breeds in yellow, Jeffrey and lodge pole pine.

18. *Melanophila consputa* Lec.

This species was very numerous and caused considerable annoyance to the men employed about the mill pond by alighting on the neck, hands and arms and biting. Most of the 78 specimens gathered were taken resting on the logs floating in the mill pond, though some were secured from the stacks of cord wood. A most variable species; in markings it varies from solid black to dull bronze and may have from two to fourteen bright or dull yellow spots on the elytra. In size it ranges from 4.5 mm. to 14.75 mm. in length, and from 2 mm. to 5.4 mm. in width. The females are larger than the males, as in most species of this family. Breeds in yellow pine.

19. *Melanophila longipes* Say (*acuminata* De G.)

Twenty-four specimens of this species were taken about the log pond. They were even more of a nuisance than *M. consputa*. Their bite is not just what one would call agree-

able and they cause considerable profanity to float out on the otherwise pure air. Breeds in yellow pine, Douglas fir and the true firs (*Abies*).

20. *Melanophila atropurpurea* Say.*

I have assigned thirteen specimens, taken at Weed, to this species. I must confess, however, that the difference existing between *M. longipes*, *M. acuminata* and *M. atropurpurea* is almost *nil* in my judgment. The separation I have made is based on the shape of the prothorax and the difference here grades from one extreme to the other until it is a mere guess where one species stops and another begins. Statements under *M. longipes* apply to the species also.

21. *Melanophila drummondi*.

Less common in California than in Oregon. Breeds freely in Douglas fir, grand fir (*Abies grandis*) and to some extent in yellow pine.

22. *Melanophila gentilis* Lec.

This beautiful species was not uncommon, but was rather more active than any of the others and a capture of two specimens out of every five was a good record. Thirty-six specimens were taken; fully one-half of these were taken from the bark or debris on the cars after the logs were unloaded. This species, like *Chalcophora angulicollis*, will rest immovable for hours where they are exposed to the direct rays of the boiling sunshine. In cloudy weather neither species is seen. I find my specimens collected in California are slightly larger and less bright in color than specimens collected by Professor Wickham in Arizona. Breeds in yellow pine. Ralph Hopping states that it also breeds in *P. lambertiana*.

23. *Melanophila* sp.

A peculiar *Melanophila*, which Dr. Van Dyke believes is a western form of *M. pini-edulis* Burke, was taken by him at Carrville, Trinity County, California, in July, 1913, and at McCloud, Siskiyou County, in July, 1914, on yellow pine.

*It is possible that the true *atropurpurea* was not taken and the specimens here mentioned are mere phases of *M. longipes*.

24. ***Anthaxia aeneogaster* Lap.**

Three specimens of this tiny Buprestid were secured. A pair in copulation was taken on the flowers of the pearly everlasting (*Antennaria sp.?*) and a single female on the dandelion (*Taraxacum officinale* Web.). Dr. Van Dyke has reared specimens from redwood and knobcone pine, and I have reared it from lodge pole pine. It undoubtedly breeds in yellow pine, and has been reported from certain broad leaf trees.

25. ***Anthaxia deleta* Lec.**

Dr. Van Dyke finds this species common about willows at times. Across the line in Oregon it is taken commonly on blossoms in the yellow pine belt.

26. ***Anthaxia sublaevis* Van Dyke.** One specimen taken in Siskiyou County, and others in Tuolumne County, California.

27. ***Chrysobothris femorata* Fab.** Found throughout the State on oak.

28. ***Chrysobothris contigua* Lec.**

This little *Chrysobothris* was not at all common; five specimens were taken on yellow pine slabwood. They are decidedly more active than most of the other members of this genus. Breeds in smaller limbs of yellow pine.

29. ***Chrysobothris dentipes* Germ.**

Doctor Horn in his monograph mentions the fact that he has never seen this species from California. I believe it is common in the northern half of the State. Its large size attracts attention at once. Though only 8 specimens were captured at Weed, many more were seen, but unfortunately they were observed at times when it was impossible to capture them. Breeds in *P. ponderosa*.

30. ***Chrysobothris californica* Lec.**

Dr. Van Dyke gives me the following information concerning this species:

One specimen, Castella, California, (in Blaisdell collection) and two from Nevada County, California (Van Dyke collection); nothing is known of the biology of this rare species.

31. ***Chrysobothris caurina* Horn.**

This was by far the most common species of the genus found

during the summer. Forty-six specimens were taken. They are very uniform in color and sculpture. Most of the specimens were taken on logs floating in the mill pond. Dr. Van Dyke says of this species: "Probably the most common yellow pine *Chrysobothris* we have in northern California and eastern Oregon. Farther south in California it becomes scarcer, its place being taken by *C. monticolae* Fall. Undoubtedly breeds in yellow pine."

32. *Chrysobothris monticolae* Fall.

The species has a more delicate color than most of our other western species. It tends towards a lilac, sometimes hinting at a rose tint and in nature has more or less of a white powdery coating which, however, is easily removed by careless handling. Two specimens, July and August. Breeds in lodge pole pine.

Weed is about 200 miles northwest of Lake Tahoe, which is the most northern point hitherto recorded for this species.

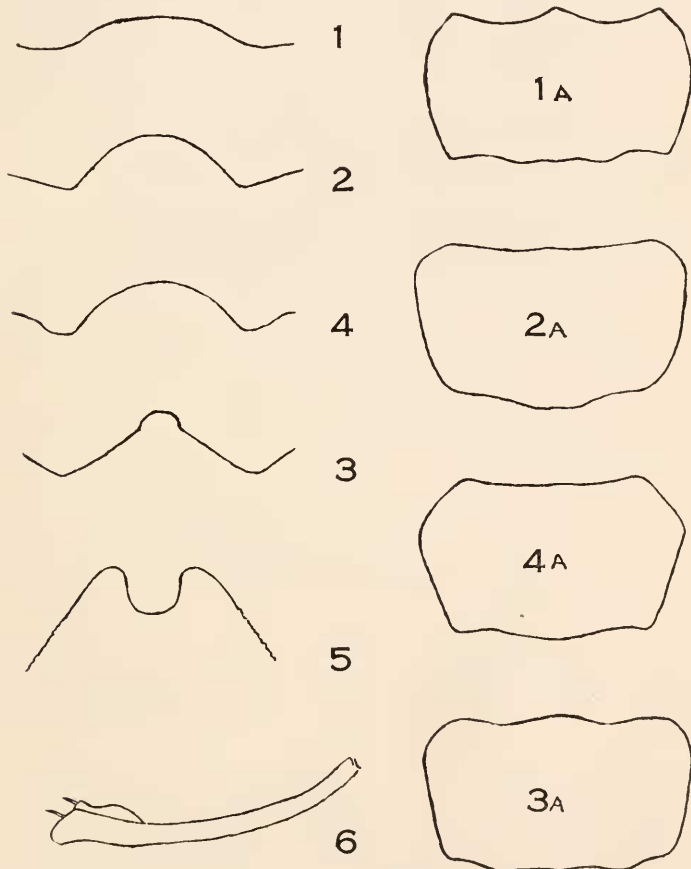
33. *Chrysobothris dolata* Horn.

Two females were taken at Weed in July. Four specimens of this species were taken in Grant County, Oregon, in July, 1914; three are females and the fourth a male. A close study of the six specimens at my disposal shows a wide variation and may possibly include more than one species. The five females exhibit four different forms, which will be more readily understood from the figures than from a printed description. Figure 1 is the clypeus of var A., Fig. 1a is the thorax of the same specimen; 2 and 2a are clypeus and thorax of var B., etc. Aside from the variation in clypeus and thorax there is little difference in the specimens. The antennae of 1 and 4 are dark cupreous, while 2 and 3 are green; 1 shows no callosities on the front; 1 and 3 are not as densely pubescent as 2 and 4. All show the same sculpture and all are of an iridescent violet color beneath. The prosternum of number 4 is a little more coarsely and deeply punctured than the others. Numbers 2 and 4 are from eastern Oregon, while numbers 1 and 3 are from Weed, California.

As far as I am aware there has never been published a

description of the male of *C. dolata*, which I believe is almost unknown. The following description is made from a single male collected by the author in the Blue Mountains of eastern Oregon, July, 1914:

♂. Has the general appearance of the female as described by Horn. Thorax a little more angulated. Color beneath iridescent, reddish purple, antennae dark purple, basal joints slightly greenish, much heavier and with less taper than the female and the last four joints have a squarish appearance, third joint about as long as next two, not



Chrysobothris dolata Horn.—Figs. 1 to 4.—Clypei of females. Figs. 1a to 4a.—Thoraces of females. Fig. 5.—Last ventral segment of male. Fig. 6.—Anterior tibia of male.

longer. Front as described by Horn, slightly pubescent, clypeus with a triangular oval emargination at middle, arcuate on each side. (This is exactly as Horn describes the female). I find that the clypeus of the females varies considerably in all specimens I have seen but is usually as shown in Figures 1 and 2. Thorax more angulated than one would surmise from Horn's description, though fitting his figure admirably; two depressions each side of middle and a third one near the margin, center (I fail to find the crescentic or oblique depressions of Dr. Horn) coarsely punctured, the punctures running together transversely, giving a strigilated appearance. Elytra same as female, prosternum not lobed, coarsely and closely punctate, margin of last ventral (Fig. 5) serrate; tip deeply, semi-circularly emarginate, the emargination deeper than wide. Anterior tibia dilated at end as shown in Fig. 6. Length 13 mm.

A single male taken in Grant County, Oregon, July 21, 1914, on lodge pole pine (*P. contorta*). This species probably breeds in *P. contorta*, *P. lambertiana* and *P. ponderosa*.

34. *Chrysobothris pseudotsugae* Van Dyke.

One specimen taken in August. This species bears a close resemblance to *C. caurina*, but is smaller and darker. The prosternum being lobed will at once separate it from *caurina*. Taken on *Abies grandis*, grand fir, at Weed, August 11, 1915. Hopping has taken this species from *P. ponderosa*.

35. *Chrysobothris laricis* Van Dyke.

This species described from a series collected by the author in eastern Oregon on larch and lodge pole pine, and has been taken in the lodge pole pine belt above Lake Tahoe and in Tuolumne Meadows, California. It no doubt will be found in the higher Cascade and Sierra Ranges from Oregon to Central California.

36. *Chrysobothris nixa* Horn.

This species is fairly common in northern California and ranges over into the southwestern portion of Oregon. Breeds so far as known only in incense cedar (*Libocedrus decurrens*).

37. *Chrysobothris viridicyanea* Horn.

This beautiful green species breeds in the limbs and smaller branches of *Libocedrus decurrens* and is found in most of the northern counties of the State. The following counties are represented in Dr. Van Dyke's collection: Trinity, Siskiyou and Placer. I have two specimens from Siskiyou County.

38. **Chrysobothris sylvania** Fall.

The type material was collected from apple in northern Sonoma County, California. Mr. Nunenmacher, of Oakland, has taken it in Del Norte County. I have collected it in the Cascades of southern and central Oregon. A number of specimens were dug from the sapwood of Douglas fir, March, 1916.

39. **Chrysobothris mali** Horn.

Occurs throughout California, where it breeds in cherry, willow and oak. In Oregon the writer has bred it from prune, peach and apple.

40. **Chrysobothris pubescens** Fall.

I have a single specimen of this species taken in southern Oregon. Dr. Van Dyke states that in California it is generally confined to the Sierras. He has taken it at Lake Tahoe and in Shasta County. There are specimens in his collection from Reno, Nevada and from Tulare County, California. It probably breeds in the smaller limbs of Jeffrey and yellow pine.

41. **Chrysobothris deleta** Horn.

This is not a typically northern species, but does occur at rare intervals, as shown by a specimen from Lake Tahoe and one from Castella, Shasta County, July 8, 1912 (in the Van Dyke collection).

42. **Chrysobothris cyanella** Horn.

This species although rare is rather widely distributed throughout the Cascade-Sierra region. The writer has taken specimens in the vicinity of Ashland, Oregon (just over the California line). It undoubtedly breeds in the twigs of yellow pine. In the Van Dyke collection there are specimens taken in Shasta County, Siskiyou County, and Lake Tahoe, California.

43. **Chrysobothris prasina** Horn.

The type of this species is supposed to have been collected in northern California. Dr. Van Dyke has one specimen taken in Sonoma County, June 30, 1912.

(To be continued.)